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# Inside Wallops

## **Telescope on a Wallops Sounding Rocket Gets Closest Look At The Sun**

Scientists got their closest-ever ultraviolet look at the Sun from space, thanks to a telescope and a camera launched aboard a NASA sounding rocket from White Sands Missile Range, N.M. in June 2002.

The images revealed an unexpectedly high level of activity in a lower layer of the Sun's atmosphere (chromosphere).



NASA image.

**Close-up images reveal an active surface with coronal loops emerging and disappearing all over the Sun's surface and can span a length of about 250,000 miles.**

The pictures will help researchers answer one of their most burning questions about how the Sun works: how its outer atmosphere (corona) heats up to over 1.8 million degrees Fahrenheit, 100 times hotter than the chromosphere. A team of Naval Research Laboratory (NRL) scientists used the Very high Angular resolution ULtraviolet Telescope (VAULT) to take pictures of ultraviolet (UV) light emitted from the upper chromosphere.

Resolving areas as small as 150 miles on each side, the June 14, 2002, flight captured images about three times better than the previous-best pictures from space. A few ground-based telescopes can observe the Sun in 93-mile increments but only at visible wavelengths of light. UV and X-ray wavelength observations most directly matter to solar weather.

Since most solar weather originates as explosions of the electrified gas (plasma) in the corona, understanding the heating and magnetic activity of the coronal plasmas will lead to better predictions of solar weather events. Severe solar weather, like solar flares and coronal mass ejections, can disrupt satellites and power grids, affecting life on Earth.

Scientists found chromospheric features in the VAULT images that match features, based on shape and spatial correlation, which they see in Transition Region And Coronal Explorer (TRACE) satellite images of the corona taken simultaneously. This comparison shows that these two layers have much higher correlation than previously thought and implies that similar physical processes likely heat each.

The telescope took 21 images in the Lyman-alpha wavelength of the electromagnetic spectrum during its 15-minute flight. Offering the brightest solar emissions, the Lyman-alpha wavelength assured the best likelihood for pictures from the rocket and allowed for shorter exposure times and more pictures. An increase in Lyman-alpha radiation may indicate an increase in solar radiation reaching Earth.

The VAULT payload consisted of a 11.8-inch Cassegrain telescope with a dedicated Lyman-alpha spectroheliograph focusing images onto a charge-coupled device (CCD) camera. The CCD, also used in consumer digital cameras, has a photosensitivity 320 times greater than photographic film previously used. The Normal Incidence X-ray Telescope from the Harvard-Smithsonian Center for Astrophysics took the previous best-resolution pictures of the Sun from space in September 1989, also aboard a NASA sounding rocket that also was launched from White Sands.

The scientists verified the payload performance with an engineering flight from White Sands Missile Range on May 7, 1999. The June 14, 2002, flight from White Sands was the first scientific flight of the payload.

The NRL team led a campaign combining observations from satellites and ground-based instruments. Scientists plan a third launch in Summer 2004. The mission was conducted through NASA's Sounding Rocket Program at Wallops Flight Facility.

For more information and images, visit: <http://www.gsfc.nasa.gov/topstory/2003/0708vault.html>

## **Wallops Shorts..... Launch**

A NASA scientific balloon was successfully launched from Palestine, Texas, on July 13. The 3.46 million cubic foot balloon carried an experiment for solar cell calibration. Bruce Anspaugh, Jet Propulsion Laboratory was the principal investigator. Total flight time was 6 hours 27 minutes.

## **In the news Daily Times**

"Offshore Missile Tests to Begin"

## **Eastern Shore News**

"Regional Partnership Targets New Projects"

## **Eastern Shore News**

"Missile Tests Begin in Ocean"

## **Daily Times**

"Group Plans for Future of Shore"

## **Congratulations to.....**

Lisa Johnson who has received the master of education degree in guidance and counseling (community) from the University of Maryland Eastern Shore. She completed her studies through Goddard's Part-Time Graduate Study Program.

## **Restoration of Hanger Floor Nears Completion**



Photo by Janie Penn

Workers plan to complete restoration and painting of the hanger floor in Building D1 (above) by late July. This restoration will reduce static electricity that can disrupt sensitive scientific instruments, produce greater endurance, better lighting, enhance appearance and simplify housekeeping maintenance.

## **Centennial of Flight Milestone**

74 years ago on July 17, Robert Goddard launched a rocket and recovered the instruments by parachute.

## Goddard Celebrates Workforce Diversity



**Voices of Wallops**

*GSFC photo.*

Celebrate Goddard Day was held recently and opened with little voices from the Goddard Daycare Center and opening remarks by Bill Townsend, Deputy Director.

Center Director Al Diaz addressed the audience by highlighting the successes of the Center, "the implementation of the integrated financial management system, an approved Master Plan and the innovation of the landfill gas installation all of which were done within a work environment that is consistent with our values agility, balance, creativity, dedication, integrity, respect and teamwork."

Diaz concluded by saying that "Goddard is a place where people really make a difference and where the differences in characteristics

aids to Goddard growing strong through diversity."

Diverse entertainment included performances by talented Goddard employees, such as the Voices of Wallops, a group of Wallops employees that harmoniously sang several national songs. Chuck Powers provided Scottish music with bagpipes and Chante Hubbard performed a moving Christian modern dance.

The Mall was filled with appetizing aromas from a variety of foods such as Greek, German, Latin and Caribbean.

Employees enjoyed food and music as they gathered information and giveaways from the directorate and Goddard Clubs' booths or purchased items from the many craft booths.

## Safety Alert

### **CD-R Disk Fails and is Ejected Explosively from CD-ROM Drive**

The NASAAMES Research Center has provided the following safety alert.



A compact disk (CD-R) being used in a CD-ROM drive at NASA Ames Research

Center shattered and was ejected explosively from the drive.

The cover and door of the CD drive were blown off and landed about six feet away from the front of the CPU. Pieces of the disk were found in a pattern that extended about three and a half feet out from the CPU.

The drive was dissected by an Ames Computer System Engineer to investigate possible causes.

The drive appeared to be in good condition other than the few remaining disk pieces that had remained there.

This is a generic 56x CD-ROM drive. No manufacturer could be

identified. However, the drive was built in China in March 2001 and bears the number CKD0112002456 (not sure if a model or serial number).

Computer specialists believe this was a failure of a flawed disk, not the drive. The brand of the disk is also not known.

Due to the distinct possibility of future similar events, the following cautionary statement was issued:

Many computer users install their CPUs on top of their desks. This places the CD drive at approximately eye level resulting in an unacceptable risk to the user should a disk failure occur.

It is recommended that, where possible, the CPU should be installed below the desktop and to the side of the users legs.

If the CPU must remain on the desktop, it should be arranged so that the front of the CD drive does not face the user or any other person.

## Integrated Financial Management News

### IFM Assistance

Integrated Financial Management (IFM) team members are available to answer questions and assist personnel with IFM problems.

They will be located in Building D-1, Room 214, and may be reached on extensions 1320, 1321, 1339, or 2264.

### Requisitions Assistance

A Requisitions Open House will be held in the Chincoteague Room in Building E-104 on Tuesday, July 15, at 9 a.m. Wallops IFM users who need assistance with creating purchase requisitions are encouraged to bring any requisitions with which they need assistance.

For further information contact Mike Bundick on x1583.

## EMT-B Class Offered

An EMT-B course will be held at Oak Hall Rescue beginning July 21 at 6 p.m. The class will meet every Tuesday from the end of July until January 4, 2004. The class will meet approximately six Thursday nights and four Saturday/Sundays and is open to anyone 16 years of age or older.

Class size is limited and pre-registration is required. Healthcare Provider CPR is required prior to the start of class. A \$15 fee is required to hold your place for class. Checks should be made payable to Oak Hall Rescue and mailed to: Oak Hall Rescue, P.O. Box 128, Oak Hall, VA 23416

For additional information or to register for class please contact Daniel Green, Class Coordinator by [mailto: email: dgreen@visi.net](mailto:dgreen@visi.net) or by calling (757) 665-1281.

## Security Tip

Telephones are frequently used to obtain personal and corporate information that can be used against you and/or your employer. Know to whom you are speaking and think about what you are saying.

Cell phone conversations are easily monitored and are one of the most unsecure and unreliable forms of communication.

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